

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended): Device (1) for the transmission of power between a shaft (2) of a thermal engine (3) and a shaft (4) of wheels (5), comprising:

- a first and a second electric machine (6, 7), and

- a mechanical assembly (9) connecting with each other the shaft (4) of the wheels (5), the shaft (2) of the engine (3), and shafts (10, 11) of the two electric machines (6, 7), this mechanical assembly (9) being formed by at least two epicycloidal gear trains, these two epicycloidal gear trains comprising each several elements which mesh reciprocally,

~~characterized in that wherein~~ it comprises,

- a switching device (21.2) comprising means (51, 53) for connecting the shaft (10) of the first machine (6), either to the shaft (2) of the engine (3), or to an element (27) of one of the gear trains of the mechanical assembly (9).

2. (Currently amended): Device according to claim 1 ~~characterized in that wherein~~

- the mechanical assembly (9) is formed by a first and a second epicycloidal gear train (31, 32), these first and second epicycloidal gear trains (31, 32) being connected with each other through their planet carriers (33.1, 33.2), a sun gear (34) of the first gear train (31) being connected to a ring gear (35) of the second gear train (32).

3. (Currently amended): Device according to claim 2 ~~characterized in that wherein~~

- the switching device (21.2) comprises means (51, 53) for connecting the shaft (11) of the first machine (6), either to the shaft (2) of the engine (3), or to the ring gear of the first epicycloidal gear train (31).

4. (Currently amended): Device according to ~~any one of claims 1 to 3 characterized in that claim 1 wherein~~

- the ratios ~~(R1, R2)~~ of the epicycloidal gear trains ~~(31, 32)~~ are chosen so that, when the rotation speed of the element ~~(27)~~ of one of the gear trains to which the switching device ~~(21.2)~~ is capable of being connected is equal to the rotation speed of the shaft ~~(2)~~ of the engine ~~(3)~~, the rotation speed of the shaft ~~(11)~~ of the second machine ~~(7)~~ is null.

5. (Currently amended): Device according to ~~any one of claims 1 to 4, characterized in that it claim 1 which~~ comprises a control device ~~(30)~~ that drives the thermal engine ~~(3)~~, both electric machines ~~(6, 7)~~, and the switching device ~~(21.2)~~.

6. (Currently amended): Device according to ~~any one of claims 1 to 5 characterized in that claim 1 wherein~~

- the switching device ~~(21.2)~~ comprises a sliding sleeve ~~(51)~~ and a fork ~~(53)~~.

7. (Currently amended): Device according to ~~any one of claims 1 to 6 characterized in that it claim 1 which~~ comprises an electrical connection device ~~(8)~~ which connects the electric machines with each other.

8. (Currently amended): Device according to claim 7 ~~characterized in that wherein~~

- the electrical connection device ~~(8)~~ comprises a DC voltage bus ~~(14)~~ and two inverters each connected to one of the electric machines and to this bus ~~(14)~~.

9. (Currently amended): Device according to claim 8 ~~characterized in that it which~~ comprises a battery connected to the voltage electric bus ~~(14)~~.

10. (Currently amended): Device according to ~~one of claims 1 to 9 characterized in that it claim 1 which~~ comprises another switching device ~~(21.1)~~ comprising means ~~(51, 53)~~ for connecting the shaft ~~(4)~~ of the second machine ~~(7)~~, either to the shaft ~~(4)~~ of the second machines ~~(7)~~, either to the shaft ~~(4)~~ of the wheels ~~(5)~~, or to an element ~~(26)~~ of one of the gear trains of the mechanical assembly ~~(9)~~.

11. (Currently amended): Process for the transmission of power between a shaft ~~(2)~~ of an engine ~~(3)~~ and a shaft ~~(4)~~ of wheels ~~(5)~~ implementing,

- two electric machines ~~(6, 7)~~, and

- a mechanical assembly ~~(9)~~ connecting with each other shafts ~~(10, 11)~~ of the two electric machines ~~(6, 7)~~, the shaft ~~(2)~~ of the engine ~~(3)~~, and the shaft ~~(4)~~ of the wheels ~~(5)~~, this mechanical

assembly (9) comprising at least two epicycloids gear trains, these at least two epicycloidal gear trains comprising each three element which mesh reciprocally, and in which:

- the shaft (10) of the first machine (6) is connected to a an element (27) of one of the epicycloidal gear trains and the shaft (11) of the second machine (7) is connected to the shaft (4) of the wheels (5), in a first mode of operation,

- the shaft (10) of the first machine (6) is connected to element (27) of one of the epicycloidal gear trains and the shaft (11) of the second machine (7) is connected to another element (26) of one of the epicycloidal gear trains, in a second mode of operation,

characterized in that wherein

- in a third mode of operation, the shaft (10) of the first machine (6) is connected to the shaft (2) of the engine (3) and the shaft (11) of the second machine (7) is connected to the other element (26).

12. (Currently amended): Process according to claim 11 characterized in that wherein

- one passes from the first mode of operation to the second mode of operation when the rotation speed of the shaft (4) of the wheels (5) is equal to the rotation speed of the element (26) of the assembly (9) to which the first switching device (21.2) is capable of being connected.

13. (Currently amended): Process according to claim 12 characterized in that wherein

- the rotation speed of the shaft (10) of the first machine (6) is null.

14. (Currently amended): Process according to ~~any one of claims 11 to 13 characterized in that claim 11 wherein~~

- one passes from the second mode of operation to the third mode of operation when the rotation speed of the shaft (2) of the engine (3) is equal to the rotation speed of the element (27) of the assembly (9) to which the second switching device (21.2) is capable of being connected.

15. (Currently amended): Process according to claim 14 characterized in that wherein

- the rotation speed of the shaft (11) of the second machine (7) is null.

16. Process according to ~~any one of claims 11 to 15 characterized in that claim 11 wherein~~

- both electric machines (6, 7) are driven to compensate a difference in speeds between a shaft of one of the machines and the element to be connected at a time of passing from one mode

Preliminary Amendment
§371 of PCT/FR2005/050765
Attorney Docket No. PSA0452159

to another, with the help of a control device (30).